PACKAGE OF PRACTICES FOR CABBAGE CULTIVATION IN CHURACHANDPUR DISTRICT

KRISHI VIGYAN KENDRA CHURACHANDPUR,
ICAR RESEARCH COMPLEX FOR NEH REGION,
MANIPUR CENTRE
Cabbage is a typical cool season crop grown for the thickened main bud called head. It is one of the most popular and widely grown vegetables in the region and has occupied second position in production after potato. It is a rich source of vitamin A, C and mineral including potassium, calcium, sodium and iron.

**Varieties:**
Green Express, Pusa Ageti, Pride of India, Green Challenger, Green Hero, Rare Ball

**Soil and Climate**
For early crop light soils are best whereas for late crop heavy soils are preferred. The optimum soil pH is 6.0 to 6.5.

It requires cool and moist climate. In lower hills of Meghalaya, cabbage is grown mainly in winter season (October-January), while in higher hills it is grown in both rainy and winter seasons. In mid hills, cabbage can be grown almost throughout the year.

**Field preparation**
For preparation of field, soil is ploughed 2-3 times with power tiller or with spade. Planking is done during the last ploughing to make friable soil bed for transplanting. Raised beds of 1 m width, 4-5 m length and 30 cm above the soil are prepared.

**Seed Rate**
**Early season:** 500g/ha, **Mid & late season:** 400g/ha

**Time of Sowing**
**Early season:** Mid June to July,
**Mid season:** Mid August to September, **Late season:** October - November

**Nursery Raising**
The nursery bed should be thoroughly prepared by adding well rotten FYM or compost @ 4kg/m2. Before sowing, the seeds should be treated with Captan or Thiram@ 2.5g/kg seeds to get rid of fungal diseases. The seeds are sown at a spacing of 2-3 cm between seeds and 8-10 cm between lines. The depth of sowing is 1-1.5cm. After
sowing, the seeds are covered with a mixture of fine soil and sieved FYM. After this, a light irrigation is provided with a water can. The nursery bed should be kept weed free.

Transplanting
5-6 week old seedlings with 4-6 leaves should be transplanted. Transplanting should be done in the evening. Immediately after transplanting, irrigation should be provided.

Spacing
**Early season:** 45 x 45cm, **Mid and Late season:** 60 x 45cm

Manure and fertilizers
FYM or compost @ 15 to 20 tonnes/ha is incorporated in the soil during land preparation. Besides FYM, N: P: K @ 120:60:60 kg/ha is applied. Full amount of phosphorus and potash along with half amount of nitrogen is applied at the time of transplanting. Remaining amount of nitrogen is applied in two split doses i.e. 30 and 45 days after transplanting as top dressing.

Weeding and earthing up
During the whole crop duration two to three weedings are sufficient to control the weeds followed by earthing up.

Plant protection measures
**Cutworms:** The caterpillars are 3 to 4 cm long, gray or brown to almost black with various markings. They hide in daytime and feed at night. They cause damage by biting the foliage and by cutting down the young seedlings just above the ground level.

**Management:**
1. Picking and destruction of the larvae at the early stage of the crop.
2. Growing of paired rows of mustard after every 25 rows of the crop.
3. Application of the heavily infested crop with Furadan

**Diamond backmoth Management:**
- Grow mustard as intercrop as 20:1 ratio to attract diamond back moths for oviposition. Periodically spray the mustard crop with insecticide to avoid the dispersal of the larvae.
- Install pheromone traps at 12 Nos/ha.
- Spray Cartap hydrochloride 1 g/lit or *Bacillus thuringiensis* 2 g/lit at primordial stage (ETL 2 larvae/plant)
- Spray NSKE 5% after primordial stage.
- Release parasite *Diadegma semiclausum* at 50,000/ha, 60 days after planting.

**Aphids Management:**
- Install yellow sticky trap @12 no/ha to monitor “macropterous” adults (winged adult).
- Spray neem oil 3% with 0.5 ml Teepol/lit or any one of the following insecticide

**Leaf Webber:** The leaves are skeletonised by the larvae, which remain on the under surface of leaves in webs and feed on them. They also attack flower buds and pods. The insect commonly sucks early grown crop.

**Control:**
- Picking and destruction of the larvae at the early stage of the crop.
- The crop should be sprayed with Cyfluthrin@ 0.5mlll of water.

**Damping off:** It is a serious disease in the nursery. In severe conditions, the affected seedlings droop and fall off due to infection at the collar region. Seed treatment with Thiram or Captan @ 2.5-3 g/kg of seed. The seedlings should be treated with Hexaconazole 5% + Captan 70% WP or Metalaxyl-M + 640 g/kg Mancozeb @ 2g/l of water.

**Black rot:** First signs of the disease often appear along the margins of leaves as chlorotic regions and the chlorosis progresses in the direction of the mid rib forming a V shaped area. Symptoms may appear from any side and centre of the leaves. The bacteria are transmitted through seeds.
Harvesting and yield
Harvesting is done when the heads are well developed and firm. The heads are cut with a knife, preferably attached with some wrapper leaves. A good crop may yield 250-300

Prepared and Compiled By:
- Dr. R K Roshan, SMS (Hort.)
- Dr. W. Rajen, ACTO (Animal Sc.)
- Mr. L. Basil, Farm Manager
- Mr. L. Somendro, ACTO (Soil Sc.)
- Dr. Niranjan Lal, Head & Senior Scientist.